

AMENDMENTS TO THE CLAIMS

Listing of Claims:

1. (Currently amended) A sensor for detecting the presence of an analyte in a solution, comprising:

a photonic crystal containing the solution;

a light source emitting a light beam at an angle to said photonic crystal, capable of illuminating the crystal with a said light beam having a predetermined wavelength and direction; and

a position sensing detector positioned so as to for detecting a change in the position of the light beam after said light beam is transmitted by through said the photonic crystal and the solution.

2. (Original) The sensor according to claim 1 wherein said photonic crystal comprises a porous polymer prepared by polymerization of one or more polymerizable components around a colloidal template followed by the selective removal of said colloidal template.

3. (Original) The sensor according to claim 2 wherein said colloidal template is an ordered, monodisperse colloidal template and said porous polymer is an ordered, monodisperse macroporous polymer.

4. (Original) The sensor according to claim 3 wherein said ordered, monodisperse macroporous polymer comprises a material selected from the group consisting of poly(methyl methacrylate) and polystyrene.

5. (Currently amended) The sensor according to claim 1 wherein said photonic crystal is selected and said light source is selected and positioned so as to create and the wavelength and the angle of said light beam cause a displacement of said light beam of at least 2 μm when the refractive index of said photonic crystal changes by 0.002.

6. (Currently amended) The sensor according to claim 1 wherein said photonic crystal ~~is selected and said light source is selected and positioned so as to create~~ and the wavelength and the angle of said light beam cause a displacement of said light beam of at least 4 μm when the refractive index of said photonic crystal changes by 0.002.

7.-14. (Cancelled)

15. (Currently amended) The sensor according to claim 1 wherein the sensor includes an array of light sources and position-sensing detectors, wherein, each light source ~~having~~ has an associated position-sensing detector.

16. (Currently amended) The sensor according to claim 15 ~~wherein~~ each light source emits a light beam at a different wavelength, wherein each wavelength is tuned to detect a different concentration of the analyte in said solution. ~~said light sources are tuned such that each source/detector pair is sensitive to composition changes in a different range of concentrations of a desired analyte.~~